MR. PROCTOR'S

AGRICULTURAL ADDRESS.

1844.

ADDRESS

TO THE

ESSEX AGRICULTURAL SOCIETY,

SEPTEMBER 25, 1844.

BY

JOHN W. PROCTOR.

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MR. PROCTOR'S ADDRESS.

Gentlemen:

The invitation to address you, on this the *Farmer's holyday*, has been accepted by me, with much hesitation. Not because I doubt the propriety of the occasion, or the importance of the objects for which you have assembled; but because I feel my inability to present anything of value or of interest, to experienced men like yourselves, on a subject which has been exhausted by the varied illustrations of the most gifted minds, and which more than all others demands personal knowledge of facts.

I have seen just enough of farming, to learn, that no man can fully understand the profession of a farmer, without serving an apprenticeship for more than one term of seven years in the actual use of the farmer's implements. I know that much may be learned from books, and the various publications that are daily issuing from the press; that many of these contain the best experience of those most competent to instruct; the *essence* of agricultural science;—but to determine *when* and *how* this essence is to be administered, here is the difficulty.

This knowledge can only be attained by actual labor; by putting the hand to the plough—the shoulder to the wheel—and the hoe to the surface. As soon should I expect a man to be skillful in the management of a ship, who had never been upon the water; or expert in chemical experiments, who had never been in a laboratory; as to understand the necessary processes of farming, without actual personal experience in them.

To this experience I make no pretensions. What I

learnt, when a boy, under the direction of a father who was then considered a good farmer, is now so far obsolete, that it may not be used. I therefore hope you will pardon my presumption in presenting such views, as I have been able to cull from the experience of others. If I can be so fortunate as to make any suggestions that may not before have occurred to you;—or to present any reasons for a reconsideration of the opinions heretofore entertained, I shall feel myself amply rewarded. Having been somewhat intimately connected with the concerns of this Society from its commencement, I did not feel at liberty to withhold any effort in my power to advance its interests.

We have come together as farmers, on this anniversary, to compare the results of our experience, and if possible to mutually aid and instruct each other. I trust the audience will bear in mind the remark of the learned President Quincy, "that in the every day labors of agriculture, there is something too rough for a polished discourse,—too common for one that is elevated,—and too inseparable from soil and its composts, to be treated to the general ear, without danger of offence to that fastidiousness of fancy, which is miscalled refinement."

It will be my endeavor to present such ideas as have occurred to me as pertinent, in the plainest possible manner, without any attempt at rhetorical flourish or imaginative ornament. Such ornaments would be as misplaced, at a business meeting of farmers, as would a ruffle shirt or a gold ring, on the person actually employed in digging a ditch—or any other labor of the field.

It is about one quarter of a century since this Society was organized. By the generous contributions of its members; the fostering bounty of the State; and the fidelity of those who have managed its concerns, it has continued strengthening with its years, making liberal appropriations annually, always limiting its expenses within its income. In so doing, it has set an example to farmers generally, worthy of imitation.

Most of those who were active at its commencement, have either ceased from their labors entirely, or are now reminded by their whitening locks and tremulous limbs, that their places are soon to be filled by younger and more efficient laborers;—enough of whom we hope will always be found ready to enlist in so reasonable a service. Here let me remind the young men of the County, that the honor of worthily wearing a certificate of membership in this Society is quite as creditable as the most glittering *tinsel* or splendid *plume* that ever was mounted.

It has seemed to me that a retrospective view of the Agriculture of the County during this period might be an appropriate theme for this occasion. By comparing the condition of our farms as they then were, with what they now are; by contrasting the modes of culture then pursued with those now most approved; by setting side by side the implements of husbandry used by our fathers with those now in use;—we may see whether or not encouragement is offered for perseverance in our exertions. We want the history of the past, because "it is pleasant to call to recollection efforts originating in good intentions and directed with generous regard to the common good." We want it, because the history of the past is "the only sure guide" for the future.

In whatever we engage, it is well occasionally to examine the grounds on which we stand, and to state the account of profit and loss. In this way alone, can any business be safely and understandingly pursued.

This Society received its first and best impulses from its first President, the venerable TIMOTHY PICKERING. Retired from the agitating scenes of public life, and the harassing excitements of political controversy, he applied the energies of his powerful mind to his favorite pursuit, agricultural improvement. For this he had ever entertained a strong inclination,—and from his early years, by observations and experiments, had been storing up facts for future application.

Notwithstanding others may have done much to advance its interests, it is not too much to say of him, that

he did more than all others. Having had the privilege of his intimate acquaintance for ten years or more, as secretary, and as his associate on the committee for viewing farms, I speak with confidence of what he did:—and I take pleasure in acknowledging that my admiration of his example in this pursuit, has ever had a strong influence on my own mind in its favour.

The first movements towards the establishment of the Society, as I am informed, were made in 1818, by about twenty practical farmers assembled at Topsfield,* who unanimously invited Col. Pickering to be their President. He may be said to have prepared the soil,—furnished and planted the seed, which others have only cultivated. He was a careful observer of nature, and drew wise lessons from his own untaught experience. He was never satisfied with superficial inquiry, but carefully looked into the connection between cause and effect. Because a practice had been continued for a series of years, was not a sufficient reason for his adopting it. Always ready to receive suggestions from others, he would cheerfully yield his assent, when convinced of their utility. He was a man who thought for himself, and bowed to no man as his master. A reference to many of the maxims that he uttered, and plans that he advocated, will show that he was in advance of the age in which he lived. I have ever esteemed the hints and observations that fell from him at our meet-

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* The names of the gentlemen who constituted this meeting, were,

John Adams *of Andover.*	Aaron Perley *of Boxford.*
Hobart Clark "	John Peabody *of Topsfield.*
Robert Dodge *of Newbury.*	Ichabod Tucker *of Salem.*
Temple Cutler *of Hamilton.*	Enoch Tappan *of Newbury.*
David Cummins *of Salem.*	Stephen Tappan "
Paul Kent *of Newbury.*	Jacob Towne, Jr. *of Topsfield.*
James Kimball *of Bradford.*	Eleazer Putnam *of Danvers.*
Elisha Mack *of Salem.*	Andrew Nichols "
Orlando B. March *of Newbury.*	Daniel Putnam "
Stephen Mighill *of Rowley.*	George Osgood "
Amos Perley *of Boxford.*	

Incorporated June 12, 1818. The first Exhibition was at Topsfield, in October, 1820.

ings, and in our journeys to visit the farms of the County, as among the most valuable lessons ever taught to the farmers of Essex. I know of no man in Massachusetts, unless I may except Mr. Lowell, of Roxbury, who did more to elevate the character of the farmer, and instruct him in his vocation. Fortunate were our farmers, in having devoted teachers, like these, with souls above all sinister purposes, and a readiness to communicate that knew no bounds. At an age when most men think their labors should be ended, he was in his prime in handling the plough, and instituting new experiments. He was not ashamed to soil his hands or his clothes with the labors of the field. He felt it no disgrace to work with those who work. In whatever he engaged, he always took the part of the *working man.* On the farm he was on a level with the farmer,—in the Senate there was none his superior.

Many who hear me, cannot but remember the simplicity, energy and propriety, with which he spoke on every subject that was introduced; and no one who listened to him with attention could fail to have been instructed by his remarks. He did not speak to display his own acquirements, but to instruct his hearers. And while all others were admiring his superior wisdom, he himself was the only one not conscious of it. Like Franklin he always had some story to the point, some illustration so apposite, that it would make an impression that would be remembered. To these lessons, thus artlessly and informally given, among the thinking, practical men in all parts of the County, do I attribute the *germs* of improvement, that have since been developed.

In taking a general view of the present state of cultivation within the County, it must be admitted, that much, very much remains to be done. That there is no *one town*, and scarcely any *one farm*, that has been made to yield more than half it is capable of yielding. But it cannot be denied, I think, that important improvements have been introduced within a few years;—that much more enlightened views of culture are becoming

prevalent;—that a spirit of inquiry is awakened that will be productive of good results;—and that the origin of many of these benefits may be traced to the influence of Agricultural Associations.

Look for example to the improved implements that have been brought into use, and particularly the ploughs, since the first trials at our Exhibitions;—and if you remember those then in use, bring to recollection their forms, for I presume none such can now be found, (certainly not in the use of any one who has any claim to be considered a respectable farmer) and compare them with those now seen and used. Will any one for a moment hesitate to acknowledge the great superiority of the patterns of ploughs presented at our Exhibitions for two years last past. Superior in every point of view, both as to the manner in which the work is finished, and the ease with which it is done by man and beast, I cannot doubt at all, that one third part of the labor necessary in this department of farming may be saved by these improvements.

I am not unmindful of the variety of opinions that exists as to the best model for a plough; that what will be highly esteemed by one, will be thought worthless by another. So great is the variety of work to be done by the plough, and so various are the modes of performing it, that it is necessary to settle in the first place, how the furrow is to be *cut* and *laid*, and then select the implement that will do it in the best manner. This having been done, notwithstanding the sneers of foreigners upon our yankee implements,* I say with confidence, it will be difficult to construct ploughs better adapted to the purpose, than some we now have.

Possibly there may be those who will admit the fact of the superiority of the implements, but still deny that

* This remark alludes to the account of a trial of ploughs lately in England, at which the American Ploughs are spoken of as altogether inferior to the English Ploughs. The American ploughs are designed to cut a *wide* furrow and lay it *flat;* the English ploughs are designed to cut a *narrow* furrow, and set it *on edge*, at an angle of 45°;—each good for the object in view, but not calculated for a different object. The English ploughs and the Scotch ploughs, that I have seen, for our work, are far inferior to our own.

this superiority is the consequence of these Exhibitions. To my mind it is a direct consequence. The premiums offered operated as a stimulus for improvement, and elicited ingenuity in the introduction of such improvements. One improvement paved the way for others; —different artists endeavored to excel each other,— and thus by compounding and combining the better points of each, have the present perfect implements been perfected. Our farmers seeing the superiority of these implements at these Exhibitions, have promptly seconded the movements of the makers, and brought them into use in the community. If no other benefit had accrued from the Exhibitions, than the introduction to general use, of the improved ploughs, it might well be contended that the balance would be in their favor.

It is now well understood that one of the most valuable improvements in the structure of the plough that has been mad , consists in forming the mould board so that it will pass through the furrow with least resistance, laying it smooth without being liable to clog. Col. Pickering states that forty years ago, while in Pennsylvania, he observed this characteristic in the plough. Afterwards, in a conversation with Mr. Jefferson, he found that he had noticed the same thing, and made a communication on the subject to the Philosophical Society. Col. P. describes the rule of construction as follows:—

"Having fixed a straight line, by one cut of a saw "from the upper corner of the mould board behind to "its point forward,—cut away the wood above and be- "low that line in such manner, that when finished if "you carry a straight rule from the fore to the hind "part, keeping it all the way at right angles with the "straight line, it shall touch the face of the mould "board, in its whole breadth, in straight lines, through "its entire winding, so that its upper corner behind shall "overhang the lower sufficiently to effect a complete "turning of the furrow slice."

Thus you see the best minds have condescended to notice small things; and by so doing, have done a more

valuable service to the country at large, than has been realized from the expenditure of millions in preparation for the destruction of our fellow beings.

In connection with the structure of ploughs best adapted to our use, allow me for a moment to ask your attention to the *sub-soil plough*, with which I presume you are but little, if any acquainted. Although known for years in Europe, and in some parts of our own country, I am not aware that it has been much used in this County. It is made to follow in the furrow directly after the common surface plough, loosening and moving the earth to the depth of six or eight inches below the first furrow, without bringing any part of it to the surface. The advantage to be derived from such loosening is, that the superabundant moisture settles down to the bottom of the furrow, and there is a constant operation of the atmosphere which gradually converts it into productive soil. It thus produces all the benefits of deep ploughing, without the disadvantage of the admixture of an undue proportion of unproductive ingredients in the soil. The soil thus moved will afford space for the extension of the roots or fibres of the plants, so that in seasons of drought, they will be less likely to fail. And the ultimate consequence will be, if the land is properly manured, an additional depth to the soil,—say instead of 6 or 7 inches, there will be found 10 or 12 inches. For root crops, and many others, such an alteration must be of great value. Where this process of sub-soil ploughing has been tried for a number of years successively, and the sub-soil has been gradually mixing with the upper soil, the whole has been found so completely changed, as to be capable of producing crops that could not before have been cultivated to any advantage.

Mr. Phinney of Lexington, to whom the agricultural community are under great obligations for his numerous and well conducted experiments, particularly those in the management of grass lands, first brought the sub-soil ploughs into use in this vicinity, about *three* or *four years since.* The pattern then used has been much im-

proved by different manufacturers—some specimens of which have this day been exhibited and tried. I learn that several farmers in the county have been trying these ploughs, on their farms the present season. Mr. Phinney, who has used this plough on many acres of his own farm, informed me that the productive quality of his soil, for many crops, had been increased fifty per cent by its use.* On a question of practical cultivation there is no man's opinion more worthy of regard. Are there not many acres of the flat lands in Ipswich, Newbury, Andover, and other towns in the County, that might be greatly improved by this process? Are there not many acres that for want of it have heretofore been considered of very little value? Certain it is, that the most casual observer, as he passes along through the County, sees four

* In a recent letter received from Mr. Phinney, he says, "I have used the sub-soil plough some three or four years, and such is the estimate in which I hold this important implement, that I should consider it a great piece of improvidence to put in a crop, without first subsoiling the ground. The character of *our soil* and *climate* are both such, being subject to the extremes of wet and dry, as to render the use of the sub soil plough of more essential benefit here than in England, and if *one half* the effects from its use, said to be produced in that country, are realized here, no farmer should be without a sub-soil plough.—The substratum with us is either a hard gravel or clay. Both are greatly benefitted by the use of this plough. In case of too much wet, the redundancy of water is absorbed by loosening the sub-soil—when too dry the plants can find support by being enabled to extend their roots deeper in search of moisture. Our crops, particularly our potatoes and other *root crops* as they are called, often suffer from droughts that almost invariably occur in our climate in August or September. A failure of these crops is oftener owing to this than any other cause. Without resorting to the test of experiment, can any rational farmer doubt that this obstacle to the productiveness of our soil may be, in a great measure overcome by loosening the subsoil. In our old fields, which have been cultivated for many years, with the use of no other than the common plough, an *under crust* has been formed by the travelling of the oxen and movement of the plough for a long time, at a few inches below the surface. This is generally so hard as to be impenetrable by the roots of plants, and hence the necessity of breaking this crust by the subsoil plough. A soil having close, hard gravel, or a stiff clay bottom, may perhaps derive equal benefit from the use of the subsoil plough. Most of my observations, with regard to its beneficial effects have been upon the former, having but little land with a clay bottom. The objections to deep ploughing, that exist in the minds of some farmers, cannot apply to sub-soil ploughing, inasmuch as the poorer part of the soil is loosened but not brought to the surface."

Mr. P. states that he has used a sub-soil plough constructed by Prouty & Mears, and is pleased with it. The best specimen of sub-soil plough that I have seen, was made by Mr. C. Howard, of Hingham. This obtained the first premium of the State Society the present year. It is of medium size, and can be procured for about $10. Ruggles & Co. have also made a variety of patterns of these ploughs.

acres unproductive, to one that appears to be rewarding the husbandman for his labor. And may it not be that the cause of this barrenness is the want of the application of this labor in a proper manner? We do not presume to say that every soil can be regenerated, by the use of the sub-soil plough, any more than that every disease can be relieved by a single medicine; but we have great confidence that it will be found an effectual remedy, where all others have failed. Were our farmers half as ready to experiment upon their lands, as they are upon themselves or their families, with the nostrums that are advertised at every corner, they would find the hazard much less, and the benefits much greater.

In this County, I believe, the example was first set, of offering premiums for the entire management of farms, including lands, stock, buildings, and all the incidentals appurtenant. For a number of years this class of premiums were received with much favor and attended with the most encouraging success. They attracted the attention of our best farmers, and most public spirited fellow-citizens, who promptly invited examination, and freely communicated the results of their experience. In this way was elicited much valuable information. The modes of managing by the most successful cultivators were opened to all. And even these cultivators themselves were enabled to improve upon themselves, when called upon to state with precision their own processes of cultivation. What if these communications have not all the skill of arrangement, and the abstract niceties of distinction, that may be found in scientific treatises; still they manifest good practical sense, in a form too that is readily understood and received with favor. They leave impressions on the mind, in which more confidence is placed, than in any speculative conclusions. They are like the direct testimony of a witness of high character.

It is much to be regretted that the interest of our farmers in this class of premiums has fallen off so entirely, that for three years past, there have been no satisfactory claims to justify their award. Perhaps this

may be explained, in part, by the fact that many of our most enterprising farmers have already been competitors, and therefore do not feel at liberty again to present their farms; and by the apprehension of others, that their farms will not bear a comparison with those that have been exhibited. Such apprehensions should not be indulged. He that hath one talent, and properly uses it, is entitled to as much credit as he that hath ten. Certain am I, that it has ever been the desire of those who distributed these premiums to regard with favor the smaller competitors.

This plan of offering premiums was for several years adopted by the State Society;—and more than once have their first premiums been awarded to farms in Essex, and to those too, which had not been brought forward in their own county. Within a few years an intelligent agent* has been in the employ of the State Society, to personally inspect such farms as may be presented to his notice, and to report such things as may be found of value. If our farmers are still to be so diffident as to be unwilling to come forward with their statements and their claims, is it not worthy the consideration of the Trustees, whether some plan of this kind, of condensing information, could not be advantageously adopted? Beyond all question, there are within the knowledge of many of our farmers facts and processes of tillage, of great value and importance to be known. And so they will remain from generation to generation, until their diffidence is removed, or their enclosures are entered

Who that has ever read the valuable documents given to the public by the late commissioner on agriculture in Massachusetts, but has regretted that *mistaken economy*, that compelled him to cut short his labors in the midst, before the work was half completed? True economy takes into view the *object* as well as the *amount* expended;—and it oftentimes is the wisest economy to appropriate liberally, when the object is of unquestionable utility. If our legislators are to be so much more anxious to retain their own seats, than to benefit the public

* Hon. Morrill Allen, of Pembroke.

by reasonable appropriations for useful purposes, how could our county societies better apply a part of the means they may command if they will, than by perfecting a plan so well conceived? If nothing else could be done, might they not require of each of the Trustees, annually, an intelligent well digested statement of the progress and produce of agriculture in their respective towns. Taking care in the choice of these officers to select those competent to the performance of this duty. By so doing a mass of information would be accumulated, that would richly repay the labor of obtaining it. Specimens of this kind of information may be seen in the annual publication of the Commissioner of patents. But it is impossible for one man, to survey the whole country with that accuracy, to give entire confidence in his estimates. Every town at least, should have its own agent, well instructed in accumulating statistical information. This is done in other branches of labor — why should it not be done by the farmer? Ask any farmer in this house, how many tons of hay, or how many bushels of corn, or what quantity of any other kind of produce, is raised in his town, or in the county, and I doubt whether he will be able to answer you *half right.* There is no want of ability among our farmers; but there is a degree of careless inattention to their own interests; a disposition to go on as others have gone before them, heedless of inquiry — that needs correction. Suppose the merchant should conduct his business in this loose way, where would he find himself, at the close of the year? Precision and accuracy are as necessary in farming as any other employment.

The improvement of the animals with which our farms are stocked, is a primary object of attention at our cattle shows. To this a large proportion of the bounties of the society are appropriated. From the farmer's stock, directly or indirectly, is derived a large portion of his income. It therefore is to him a matter of first importance, that he have correct ideas on this subject. Much has been written in relation to it, and, without doubt, opinions have often been modified by interested considera-

tions; but still we do not find any essential improvement among the animals on our farms generally. Now and then we see a few that have been reared with care and attention, but the great mass of our animals may be said to come forward in the *natural way.*

Public spirited citizens, with abundant means at command, have introduced choice specimens of the improved breeds from Europe. In so doing they have done a commendable service, by showing what may be accomplished by perseverance in the application of scientific principles. For these efforts to diffuse information, they merit the thanks of those who are less favored with the means of making such experiments. Of the superiority of these animals in many respects, and particularly in their size, and early maturity of growth, there can be no doubt. The testimony on these points is too full to be questioned. And of their having been made such by care in the selections and crossings, there can be as little doubt. Nature does not refuse to be assisted in the perfection of her works. By the application of the industry and skill of man, may all the productions of nature, whether animal or vegetable, be essentially modified and improved.

The point to which I particularly ask your attention is, whether it is better for our farmers to endeavor to stock their farms with what are commonly known as the improved breed of animals from England, such as the Durham short horn, and others; or whether their attention had better be directed mainly to improving what are called, our native breed of animals? True it is, that these came originally from that country which is the mother of us all, (and were there known as the Devon breed, I believe,) but they have been so long settled and have become so acclimated, that their peculiarities are as distinct, as are those of the people.

In instituting this inquiry I have no particular theory to support, or party to serve. My only object is to elicit the truth; and this I must do by comparing the facts stated by those who have observed with discrimination and impartiality.

First, as to *working oxen;* is there any reason to believe that better animals for these purposes can be found, than are those of our native breed? I have never seen any oxen superior for labor to the best specimens of those raised in the county of Worcester. I speak of this county with emphasis, because much more attention is there paid to the rearing and training of these animals, than in Essex. Their steers (particularly in the town of Sutton,) are made to know and take their places with as much regularity as boys at school. Many fine specimens of animals well trained have been exhibited from Andover, Haverhill, and other towns; and without doubt, such can be found in almost every town in this and other counties; but in none in such perfection and abundance as in some of the towns about Worcester.

In proof of the opinion expressed of the superiority of our cattle for labor, may I not refer to the numerous teams that have competed in our ploughing-matches in years past, varying from *thirty* to *fifty* in a year? When has it happened that one of our first premiums—I may almost say any of our premiums—have been obtained by oxen, other than our own native breed? Or when has it been known in this county or elsewhere, that premiums for best working oxen have been awarded to others, when our own were admitted as competitors? I am not aware that this point has ever been considered in making these awards. This does not in any manner weaken the force of the argument. The inference I think is, that had they been actually superior, some of those shrewd practical men who have contended for premiums, and who know how to manage these things to the best advantage, would have been likely to have discovered it. I think also, they would ere this have been more generally used. I therefore, think, that their superiority is not proved by their *works.* On the contrary, that our native breed are decidedly preferable for labor to any others that I have seen.

How is it in regard to *milch cows*, for dairy purposes? An animal which when viewed in all her relations is not second in importance to any other. In regard to these,

the county of Essex may speak with some confidence. Here have been raised and exhibited numerous cows that will bear a fair comparison with those of any other county. Instance the Oakes Cow and the Nourse Cow, and the present year the Pond Cow, (all of which were from Danvers, I believe,) they have not been excelled by any others. Two of these yielded from 16 to 20 pounds of butter a week, for many weeks together, of superior quality, and this without extraordinary feed or pampering; and the other, 14 quarts of milk per day, for ten months together. Statements of similar produce have I noticed within a year, of cows of native breed at Springfield and Northampton.*

If such animals can be found in this manner, without any extra care in rearing, what might they be made, by the application of the skill that has been used in perfecting the foreign breeds? I am not unmindful that single instances may be found of the short-horn cows that have yielded from thirty to thirty-six quarts of milk per day; and of flocks that have produced larger quantities of milk, in *weight* and *measure*, than have been obtained from the same number of native cows. In the notices of these cows that I have seen, the *quantity of their milk* is usually spoken of, and not the *quantity of butter* it will yield. Now every intelligent observer knows that 20 quarts of milk from some cows will yield more butter than 30 quarts of milk from other cows; so that the *quantity* only gives but an imperfect idea of the value of their produce. Take into view also the expense of feed required, and their comparative capacity to endure the severities of our climate, and the peculiarities of their habits; and it may well be questioned whether the foreign breeds are of so much value upon our farms, as those that might be raised from the best of our own stock. All that is wanted is the same care in selection and vigilance in rearing that have been applied to the others, and there will be no deficiency in an adequate supply of milk for our dairies.

* In the Massachusetts Ploughman, a paper worthy to be read by every Farmer.

Why is it that so little care is given to the selection of *milch cows*, when there is so much choice in them ;—both in regard to the feed required, and the milk produced ? It costs no more to support a cow that will yield from 16 to 20 quarts of milk per day, than one that will yield 10 quarts. The one merely earns her living, the other not only supports herself, but him who feeds her ;—and if care is taken to rear her progeny, will ensure a perpetuity of her good qualities.

In connection with this idea, it will be remembered by some of the Trustees, that as early as 1823, premiums were offered for *improving our native breed of neat cattle*, to be paid in 1828. And it was then remarked,* "that it would avail little to bestow premiums merely for the best that shall be produced, unless something is done to preserve the breed ; for such premiums might be given for a century, without effecting any real improvements; and thus as to live stock, defeat the object for which the society was formed." I now appeal to the Trustees to consider the principles then stated, and to inquire how far they have been applied. Have we not gone on from year to year, almost exactly in the way then stated to be of no use ? How can it be expected that our stock will be improved, unless care is taken to raise from those of best qualities, their offspring of best promise ? Every farmer recognizes the principle that a good cow is most likely to have a good calf. They act upon this principle in selecting their calves to be raised. This then is the ground upon which your premiums should be offered; *not only for the best animals, but for the best efforts manifested in improving the breed of the animals, with a statement that shall enable others to imitate these efforts.*

So distrustful am I of my own competency to express an opinion on this subject, that I beg leave to corroborate my own views by citing the opinion of Mr. J. Lowell, as expressed by him in a report made at Brighton, October, 1822. Says he : "Although the milch cows

* By Col. Pickering—then President of the Society.

"of Great Britain and the Netherlands are in *general* far "superior to our own ; I have never seen an imported "cow of equal merit with some of our own that have been "here offered. So fully am I convinced of this truth, as "well as that our country possesses a very considerable "number of these fine cows, that I am persuaded if Great "Britain or the Netherlnnds were to send us ten cows, "each of the best quality, New England alone could "furnish twenty which would equal them in the quanti- "ties of milk, butter, and cheese, which they would re- "spectively produce."

To this he adds, "If every owner of a good and very "superior cow, would consider her in a proper light, not "merely as a valuable animal during her life, but as ca- "pable of improving his whole stock, if he will spare no "moderate expense in procuring calves from her of bulls "of an improved breed, we shall soon see our whole "stock gradually improve."

It will be remembered by many who hear me, that in 1825, a very full discussion of this question was had between Col. Pickering and Col. Powell, of Philadelphia, in the course of which Mr. Powell admits that the short-horns, so called are too large for the ordinary purposes of our farms, and then adds, "by an immutable law of nature, which never ceases to affect the animal not less than the vegetable creation, *in a few generations*, their size will be accommodated to the food given for their support." Mr. Pickering replies, "we now have a breed exactly accommodated to the food given for its support, and inquires whether it is more eligible to propagate a gigantic breed which "in a few generations" may be sufficiently *reduced* in size, and thus accommodated to our service and means of keeping them, or with spirit and resolution, to engage at once, in the laudable and profitable enterprise of improving our native cattle by a careful selection of the best males and females, and thus "in a few generations" *raise* them not to *gigantic sizes*, but to a high pitch of perfection, for the primary objects of New England farmers, *labor*, *beef*, and *rich milk* for *butter and cheese*." In expressing this opinion

of the *equality* not to say *superiority* of our own milch cows, and their peculiar fitness for our farmers' dairies, I know that I am treading upon the toes of high authority, and exposing myself to criticism and remark. I know there are those, who will give you the pedigree of their stock, with as much precision, as ever did a Jew of his family, and that their notions of value are much modified, by the number of degrees they have taken, or the high sounding epithets applied to their names. This practice of tracing their history is commendable. But a high sounding title will never alter the character of a *calf*, of whatever description he may be.

I know that at our cattle shows we admire and give a preference to those sleek and beautiful animals, that are as it were polished for the exhibition; and that we should feel grateful to those who thus show us what can be effected by care;—but still we do not find in them the real *stamina* for our dairies. As soon should I think of selecting from the *brilliants* of a ball room, the best manager of a dairy.

The prices at which these animals are holden, constitute a serious obstacle in the way of their being procured by common farmers. I cannot see any good reason why such extravagant prices as $1000, or more, for a single animal should be countenanced. Our farmers cannot afford to appropriate the entire income of the year, to the purchase of a single animal. "I have found," says Gov. Hill, (a very intelligent and safe guide on agricultural subjects,) "it to be the invariable safe course, for all who have no property they can afford to throw away, to purchase no article or commodity not absolutely necessary, when that article or commodity bears an unusual price." *

* In 1827, at the suggestion of Col. Pickering, and by the liberality of Gorham Parsons, Esq., of Byfield, an attempt was made to introduce the Alderney breed of cattle at West Newbury. I have received from my friend, Col. Newell, some interesting facts in relation to these animals, many of which are now there. He thinks them superior for their *milking properties;* but in consequence of their inferiority of size and appearance, they have not readily come into favor. He thinks favorably of crossing the Alderney and the Ayrshire breeds with our native stock, with a view to produce good cows for the Dairy. It seems to be the better opinion of those among us who have had

The use and improvement of wet meadow and swamp lands, early occupied the attention of this society, and has afforded some of the best examples of successful experiments. A brief reference to these may be useful, not only in showing how similar improvements may be made, for this is one of the most extensive fields for improvements; but in guarding against the misapplication of labor in mistaken modes of operation. In regard to these grounds, it should be borne in mind, that they vary quite as much in their texture and component parts, as do the upland soils; and that it is necessary to vary the process of redemption accordingly. The foundation of all improvements in this kind of land, is first to free them of the superabundant water with which they are burdened. This must be thoroughly done, and in a manner that shall continue them free. Much labor has been lost, by temporary drains, that soon become impeded by grass, leaves, or other obstructions; leaving the ground in as bad condition as at first. The same necessity that required the drains to be made, demands that they should be continued open. When the water is removed, then the coarse grasses or meadow plants are to be destroyed, and the texture of the soil is to be brought into a condition to support the growth of the upland grasses. In its meadow state it is too porous, too much like a honeycomb, for this purpose. It needs either to be wrought over or to have some other substances mixed with it to make its texture more compact. There is no want of vegetable matter or nutritive substances, the only thing necessary is to bring these into a position that they can be successfully used. Various modes of doing this, have been attempted, with more or less success; probably from a want of proper attention to the qualities of the land sought to be reclaimed. Some meadows are composed mostly of decayed vegetable and animal substances

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most experience, so far as I have been able to learn their opinions, that by a judicious crossing of the best of the English animals with our own, a race may be produced of more value, and better adapted to the climate, than any now to be found. A very large proportion of the Durham cattle now to be found are of that *coarse, elephantine* character, that would not be admired or even endured, by the best judges in England.

that have passed through a state of putrid fermentation, and as soon as the water is removed, and the particles of the soil are brought in close contact, are susceptible of being made very productive. Especially when a dressing of some appropriate manure is applied, adapted to stimulate the other parts to successful action.

Others of a peaty texture, contain substances that have not been through the putrid fermentation, necessary before it can be used as the food of plants, or the component parts of manure. These need to be exposed to the action of the atmosphere, and to have other substances mingled with them.

The first attempts at improvement on these lands, to which our attention was called, were by Messrs. Osgood, of Andover, Putnam and Ingersoll, of Danvers, and others. These were made principally by draining, and by the application of sand and gravel to the surface. The expense of covering the sod with a sufficient depth of these materials, to completely check the growth of the meadow grasses, operated a serious check upon improvements of the kind, and the care and attention necessary to continue the water courses open, and the frequent repetition of a dressing of manure required, prevented an extensive application of this kind of improvement. Fine crops were in some instances produced; but it is not expedient for the farmer to spend his efforts in raising fine crops, when they cost more than they are worth. Such instances of culture, in the vicinity of his residence, may sometimes be justified by collateral considerations; but in general, it should be the aim of the farmer, that the produce should repay the expense of producing it. Others attempted improvements by *paring* and *burning* the surface; and this was done in repeated instances with good success. Among the best experiments of this kind were those of Messrs. Osborn and Brown, of Saugus, and Mr. Newhall, of Lynnfield. I witnessed the crops on their lands, on the first and second year after they commenced, and found them most luxuriant. What have been the subsequent crops, I am not informed.

More recent experiments in reclaiming these lands,

have been made by turning over the sod, and mingling with it a sufficient quantity of loam, or other substance, to give it a consistency to support vegetation, and then cultivating it in a manner to preserve the remains of the decaying vegetable matter in the soil. Unquestionably, where the process of draining can be so complete as to admit of this,—this process of culture will be most eligible. For so much of the vegetable material as has been destroyed by fire, or otherwise removed, will in the course of time, need to be replaced for the renovation of the soil. Successful experiments in this way have been made by Messrs. D. P. King, of Danvers, J. Marland, of Andover, and J. Newhall, of Lynnfield. Similar experiments with the best success, without the application of gravel, were made a number of years since on the farm of Mr. J. Nichols, in the south-westerly part of Salem. Here special care was taken to keep the ditches clear, and free of grass or leaves, so that no obstruction should remain to the perfect draining of the land. I refer to these instances of culture, as specimens of the practical application of the principles, but not as descriptive of all that has been done. The mode of management proper to be adopted, must depend upon the particular character of the meadow or soil,—upon the depth and component parts of the vegetable material ;—upon the nature of the sub-soil beneath;—upon the character of the springs that flow in from the adjoining hills;—and upon numerous other varying circumstances observable in particular cases, that cannot be anticipated or specified in any general rules. In this as in all other farming processes, there is constant occasion for the application of good judgment and good sense. The application of theoretic rules without these will often end in disappointed hopes. By good sense, I mean the right application of well established scientific principles.

A most important use can be made of these bogs and reservoirs of vegetable matter, by taking therefrom at convenient times, supplies for the barn-yard, for the swine-pen, and the compost heap, all of which are indispensably necessary on every well managed farm. The experience of the last twenty-five years has taught much

in relation to the making of manures. The farmer who then made fifty loads of manure in a year would not now feel that he had done his duty, with less than two hundred loads. And no farmer does his duty who does not produce this quantity, or more. If you expect bountiful crops, you must feed the soil as bountifully with the necessary food of such crops. The primary vigor of our soil has been used up. Our success in cultivation depends mainly upon skill in preparation and application of manure. As well may you expect your beef or your mutton to be fatted by the air, as your land to be productive of good crops, without an ample supply of manure. It was forcibly remarked by Mr. Gray, in his address to this society, in 1841, "These "unimproveable "lands," as they are styled, contain *manure enough* in "some sections to cover all our tilled lands a foot deep; "*manure enough* to render every acre of the soil as fertile "as the prairies of the west; *manure enough* to cause "two tons of hay to grow, where now grows but one, and "an equal increase in all other productions of the farm." From the chemical analyses that have been made within a few years, of different ingredients that may be found in our *swamps*, *meadows*, and *marshes*, capable of being converted into manures, there is reason to think that we have scarcely begun to find out the means of improving our soils within our reach. Further inquiries are proper to be made on this subject; and it behooves our agricultural societies or the State, to see that it is done. If we could be assured that by proper application of labor and skill, the productive power of our soils might be doubled; there would be no occasion to roam after more fertile fields, in other regions, to the hazard of the loss of those distinguishing traits of character, which constitute the charm of New England society.

Much discretion is to be used in the adaptation of manures to the different kinds of soil, and to the peculiarity of condition in which the soil is at the time of application. What will be *life* to one, will be *death* to another. Many of our farmers learn this, more or less, from their own personal experience, without knowing the reasons why

it is so. If they would take pains to look into and understand these reasons, which can be done just as readily, as they understand it is better to plant their corn in May, rather than in November, they might save much labor. Without doubt, many a farmer loses more than half his labor applied on manures for the want of this knowledge.

Public attention has lately been much called to the application of manures in a more condensed and concentrated form, such as *poudrette*, *guano*, *bone dust*, &c., divested of the coarser and unproductive ingredients. For gardening and city culture such manures may be highly valuable. But whether it will be in the power of our farmers generally, who rarely have spare funds for the purchase, to dress their lands in this way, has seemed to me questionable. The farmer should endeavor to find within his own precinct the means of replenishing his soil. His main reliance, after having taken proper care of his barn-cellar, his barn-yard, and his pig-pen, should be on his collection of compost. It is believed that almost every farmer will find within his own limits, or in his immediate vicinity, abundant materials for this purpose. When not necessarily employed in other things, his attention should always be given to the collecting or saving something that will increase his supply of manure. The careful cultivator will find many opportunities in the course of the year to add to this *main-spring of good husbandry*. "Let no man," says Mr. Quincy, who is equally at home on the farm, as in the College, "consider his barn-yard properly arrang-
"ed, until he has a receptacle for his manure, water
"tight at the bottom, and covered at the top;—so that
"below nothing shall be lost by drainage, and above
"nothing shall be carried away by evaporation."

What would be said of that farmer who when he had raised his field of grain should suffer it to remain exposed until one half of it was scattered by the winds, or otherwise lost? Do we not often see a destruction equal to this, in their collections of manure? Is it extravagant to say that one half of the manure ordinarily

made by the cattle on a farm is wasted? Look to the common structure of barns, where the manure is thrown out to the sides, exposed to the sun and rain for half the year;—or to the yards where the cows pass their nights in summer; and compare the products of these barns, or these yards, at the end of the year, with receptacles for the manure properly regulated, and I doubt whether there will remain half the quantity. Take into view further the increase that may be made by placing the cattle in position to preserve the liquids that are about every stall, by the aid of which mingled with earth may be made the best of manure, and it will not be too much to say that our farmers generally lose two thirds of the materials they have at command for enriching their lands. How many of them not satisfied with the losses thus accruing take special care to draw their manure to the fields when made, and to lay it in a position that will effectually scatter a large proportion of the virtue that remains? Or when they come to use it, spread it upon the surface and thus lose its fertilizing powers? Again and again has it been demonstrated, when manure is applied to land, its tendency is to *ascend* and not to *descend*. An examination of the sub-soils on lands that have long been under a state of high cultivation proves this. It is therefore indispensable in the application of manure to the best advantage, that it should be mingled with and covered by the earth. Care also should be taken that it be properly pulverized or subdivided, so that when mingled with the soil, the union be as perfect as possible. Recent experiments of Professor Liebeg, show that *ammonia*, or the power to produce this, is the principal fertilizing ingredient in manure. As much care, therefore, should be taken of this in the field, as in the *smelling bottle* at church.

Clay, sand, and lime, are the principal ingredients in most of our soils. A due admixture and proportion of these is essential to successful cultivation. It was the remark of Mr. Fessenden, that "clay without sand, or "sand without clay, and both of these without lime, are "like a stool intended for a tripod, with but one or two

"legs, worth little or nothing, till the missing part or "parts are supplied." Such modifications of the soil, with the application of such manures as are specially adapted to the crop sought to be raised, is the business of the intelligent farmer. No man can make pretensions to this distinction, without the requisite qualifications. If a man offers his services to make your shoes, or to build you a cart, or to teach your children at school, you inquire into his qualifications to discharge these duties. Why should not the same inquiry be instituted, when he offers to cultivate your lands? To constitute a good farmer requires a due admixture of scientific theory, practical skill, and common sense. The one without the others often misleads to visionary speculations, and thereby brings into contempt all scientific operations.

I cannot better illustrate the benefits that may be derived from the proper preparation and application of manures, as compared with the heedless use ordinarily made, than by reference to the extraordinary crops obtained by gardeners and others from the careful cultivation of small parcels. In every village may be found instances of such culture, where the profits accruing over and above the extra labor, are ten times as much as farmers usually realize from the same quantity of land. Possibly it may be said that the demand for such garden vegetables, as *asparagus*, *lettuce*, *strawberries*, *&c.*, from which the greatest profits have accrued, is of so limited a character, that few can find their account in this kind of cultivation. I will, therefore, refer to the cultivation of the onion, which is distinctly the business of the farmers in my neighborhood, many of whom have more acres of onions than most farmers in the county have of Indian corn. The average yield of this crop is 300 bushels to the acre; sometimes as high as 500, or 600 bushels. The ordinary expense of manure and labor to an acre may be estimated *double* that required for Indian corn;—this estimate is believed to be ample to cover all that will be requisite, for a series of years, especially when it is taken into view that much of the labor of weeding and gathering may be done by children. For ten years

past from 30,000 to 60,000 bushels in a year have been raised in the single town of Danvers. The average value of the crop when brought to the market is fifty cents per bushel, or $150 per acre. In what way can so fair a profit be realized from the land? Take into view also the condition in which this crop leaves the land for other crops, actually benefitted, and it will be found one of the most advantageous crops that can be put upon the land. How happens it that these cultivators are thus successful. Is it not because they are careful in the preparation of their grounds, and in the selection and application of appropriate manures in a proper manner? Within my own remembrance, these same cultivators scarcely knew how to raise a bushel of onions, and thought their soil would not produce them. Would not the same kind of care find its reward in the cultivation of other crops? Indian corn for example, this most luxurious and valuable Yankee crop, thirty years since was estimated at an average of *thirty bushels* to the acre. Will our farmers be content with such an estimate, when double the quantity can readily be obtained by the same labor, with the application of proper skill and manure in the preparation and cultivation of the land? The lesson to be drawn from these facts and considerations, is, *cultivate so much land as can be well done and no more; and leave no part of the process of cultivation slightly performed.*

Neglect of this salutary rule is unquestionably the common error of our farmers. In the first place, they spend their means in procuring additional acres, thereby depriving themselves of the power of profitably cultivating the few they had. This disposition to engross many acres, and to own, as is the desire of some, all that join them, is not only a private but a public evil. It checks enterprise and prevents the natural increase of population. Where lands are thus possessed, what chance is there for the enterprising young man to become a proprietor? Can you not bring to recollection hundreds of acres that have thus for years, been excluded as it were from all useful purposes? Within my own observation, I have known farms that remained for years in the hands

of one proprietor, when they came to be divided into the hands of five or six, to yield more on each part, than the whole did when held by one. By a proper division of our lands, allowing no one to engross more than he can judiciously manage, not only would our territory support a larger population, but the population itself, would be more independent.

The proper appropriation of capital and labor on a farm may be illustrated by a comparison with the every day occurrence of the building of a house. Suppose a person of moderate means is about to erect a house, for the accommodation of his family, is it wise to put up the *frame* and *covering* of a building, so large that he cannot finish but a small part of it, leaving the front and chambers, a sort of dreary and desolate waste for swallows and vermin ;—or is it best to put up a tenement such as he has the means of furnishing and finishing in a decent and comfortable manner? No one who has ever noticed the contrast in such tenements, and many such can be found in almost every village, will hesitate to say that the wiser course will be to erect such an one as can be comfortably finished. Let the farmer apply this principle. Let him procure so much land as he can thoroughly cultivate, and apply himself to this. And as his means increase, so may his cultivation extend. Capital and labor are the true sources of income. If concentrated they produce more than when diffused. It is not the extent of lands that determines the farmer's profits, but the State of culture to which he brings them. What were formerly sound rules of conduct, have now in many cases become almost obsolete. So many and so great have been the changes in the facilities of communication from place to place ;—in the transportation of commodities from one part of the country to another ; in the introduction of new varieties, and in the alteration of habits of living, that the course which was then judicious now needs much modification. Now when the farmer goes to the market with his beef, his pork, or his butter,—articles from which he used to expect to raise cash to meet his taxes and other necessary payments,—

he there finds it forestalled by the products of the valleys beyond the mountains,—where the fields are waiting to be sown, and the forests of hundreds of years, have enriched them to overflowing. How can the farmer here compete with the farmer there, in raising pork, with corn at one dollar per bushel ;—when there it can be obtained at one quarter part of this sum, and when raised it can be transported to our market at one quarter of a cent per pound ? And so with wheat, with corn, and many other articles on which the farmer used to rely for his income, and for raising the means for paying for his lands. For so it is that most of those at the age of fifty, who are found to be in the possession of their own acres, in the most thriving condition, have purchased these acres with their own earnings. In the agricultural, as in the trading community, property will not adhere that is not cemented by labor. The young man, therefore, who sets out to be a farmer, must look about him and see how farming can be supported. What kind of crops there are that will pay for themselves, and something more. He must so manage as to make both ends meet. I cannot too strongly urge upon him the necessity of keeping accurate minutes of what he does ;—and of making exact estimates of the result of his labors and experiments. Nothing is more detrimental to good husbandry than uncertain conjectures. Though the result of our operations may not correspond with our wishes or expectations, we should not close our eyes upon the facts. Truth, exact truth, will ever support itself and him who cherishes it. I would not by any means discourage the farmer in his labors by these suggestions ; but would exhort him to vary his culture ; look about him for a market ; select such articles for cultivation as the demand requires ; so that when driven from one position, he may have another of more security in reserve. Those are said to be the wisest commanders in war who make certain a safe retreat.

The implements and tools to be used by the farmer demand much more attention than is usually given to them. The difference between the application of labor

with tools of good construction, adapted to the purpose, and with tools of bad construction, may be the entire difference between a successful and a ruinous husbandry. This has been before remarked in regard to the plough. In many other branches of labor have there been almost equal improvements. Instance the gathering of hay, by the use of the *horse rake*. If I am rightly informed three fourths of the labor of raking may be saved by it. This is a matter of great consequence, when time is so valuable as in the haying season. The *cultivator* too does much, when properly applied, in a short time, far better than it can be otherwise done. The *roller*, how few of our farmers rightly understand the advantages to be derived from this! In the most approved processes of managing lands, a roller is as indispensable as a plough. Still I doubt whether half our farmers have ever had one on their farms. Many other less prominent implements have been equally improved, and demand of the farmer who would labor to best advantage to be brought into use. The grand difference between a thriving farmer, and one that does not thrive, is—the one looks out for the *fractions*, the other does not. In farming, nothing should be lost; nothing should be neglected; everything should be done at the proper time; every thing should be put in its proper place; every thing should be performed by its proper implement. When these rules are observed, the farmer will surely prosper—though his gains may be slow, they will be certain and sure. His dividends are under his own control, and are not liable to *embezzlement*.

Among the improvements of a few years past, there are none that promise more, than those in the cultivation of grass;—a crop of greater value and extent than any other to the Essex farmer. A crop that demands a particular notice at an Exhibition in Ipswich, distinguished before all other places in the County for its hay products. The peculiarity of this culture, first brought to the notice of the public by Mr. Phinney, is, that the land is continued in grass, year after year, without the intervention of any other crop, except occasionally Indian

corn. How long this can be done remains to be proved. Thus far it has succeeded well. It is done by turning the furrows flat, rolling them smooth, harrowing or cross-ploughing, or both, without disturbing the sod, applying compost manures and the seed upon the surface and harrowing it in. This process is repeated as often as the land demands a coating of manure. The land is kept in a light and favorable condition for supporting the crops, by the decaying vegetable matter that was upon the surface. This mode of culture is somewhat at variance with the system of rotation of crops, which has been so generally recommended as essential to good husbandry. The best specimens of this culture that I have seen, have been on the farms of Mr. W. Sutton, of Salem, and Mr. D. P. King, of Danvers, to which I refer the curious to examine, as affording a better illustration of the benefits, than in my power to give.

Another modification in the cultivation of grass which has been successfully practised by Mr. D. Putnam, of Danvers, and others, and which is now coming into general favor, is by sowing the seed among the corn at the last hoeing—taking care to have the ground left in a level and smooth condition. Repeated experiments have shown that the old practice of raising a hill about the corn is not attended with any benefit. If then, the smooth culture of the corn will aid in bringing the lands into good condition for grass, which is the primary object in view,—our crops of barley, oats and rye being raised merely as secondary objects of attention,—does it not behove our farmers to inquire whether their grass seed cannot be advantageously sown in the Summer or Autumn, without any intermediate crop of English grain? When thus sown it is much more certain of taking root, and in much less danger of being cut off, by the burning sun, which usually follows the removal of crops of grain. I have adverted to these modes of grass culture more for the purpose of inviting attention to them, than to express any decided opinion of my own; because I am sensible it is never safe to draw general conclusions, from a limited number of experiments.

The comparative value of crops raised for the feeding of cattle, &c., has been a prominent object for which premiums have been offered by this society, but without producing any satisfactory experiments. This would seem to be an object deserving attention, as without this knowledge the farmer is playing a game of chance, without knowing the value of what he raises.*

In bes owing the bounty of the State upon the Agricultural societies, it was done on condition "that such encouragement should be annually offered as seemed best adapted to increase and perpetuate an adequate supply of ship timber within the Commonwealth." The letter of the condition has been complied with;—but what has been the result? Where is the tree now growing that started into being in consequence of this bounty? Where is the cultivated plantation of oaks, even to the extent of a single acre within the County? Our records show hundreds of dollars offered for their encouragement, and occasional awards for hopeful promises; but I fear that the time is far distant, when it will be in our power to use the fruits of these bounties in defence of our shores.

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* In the report of the Commissioner of Patents, for 1843, p. 120, is the following tabular statement, which will afford some light, until we ascertain for ourselves with more certainty. One hundred pounds of good hay are equal to

275	lbs.	of	green Indian corn,
442	"	"	rye straw,
164	"	"	oat straw,
153	"	"	pea stalk,
201	"	"	raw potatoes,
175	"	"	boiled potatoes,
339	"	"	mangel wurtzel,
504	"	"	turnips,
54	"	"	rye,
46	"	"	wheat,
59	"	"	oats,
45	"	"	peas or beans,
64	"	"	buck wheat,
57	"	"	Indian corn,
68	"	"	acorns,
105	"	"	wheat bran,
109	"	"	rye bran,
167	"	"	wheat, pea, and oat chaff,
179	"	"	rye and barley chaff,

16 lbs. of hay is equal to 32 lbs. of potatoes; and 14 lbs of boiled potatoes will allow of the diminution of 8 lbs. of hay.

Curiosity led me a few weeks since to inquire for the plantation in Hamilton, for which the State bounty of one hundred dollars was awarded about forty-five years since. By the aid of a friend I found the place, but the trees were few and far between.

Were our Legislators entirely in the wrong in supposing the cultivation of such trees to be a desirable object? Or does the mistake lie with the proprietor of the soil? That timber trees are indispensably necessary for the convenience, prosperity and safety of the nation, will be admitted by all. That they can be successfully cultivated, with proper attention applied, is equally clear. Why then is it not done? Why has it happened that all the attempts have proved abortive? In what manner could Essex farmers better consult the permanent interests of their children, than by planting trees? Grounds so rough and rocky as to be unfit for tillage, and we have many acres such, can in no way be so profitably improved. In England and Scotland are hundreds of acres of forests now growing, in most thrifty condition, that were planted by the hand of man. Shall not the independent yeomanry of New England, the tenants of their own soil, have equal confidence in the stability of their institutions, and the propriety of providing for the benefit of those who may come after them, as do those who toil to plant where they never can own? Perhaps the uncertainty of the tenure of our estates, and the still greater uncertainty of the disposition of the rising generation to be willing to follow the humble but honorable occupation of their fathers, has deterred many from venturing upon experiments, the benefits of which could not be realized while they lived. Such a policy is short sighted, and unworthy enlightened citizens. What consequence is it whether our acres are inherited by our sons or others, if they are but rightly used? Does not this jealousy of feeling operate in a manner to alienate the affections from the paternal estate? Are not the *ever changing movements* of the age unfavorable to permanent valuable improvements?

The cultivation of trees generally, whether for orna-

ment, for fruit, or for timber, is an object that demands much more attention than has been given to it. I have not time to speak as I would like, of the cultivation of fruit trees,—of the increasing attention lately given to the subject,—of the many and valuable varieties of apples, pears, &c. cultivated by our horticultural friends in Salem, Lynn, Haverhill, and other towns;—but can simply say, that there is no branch of husbandry that yields a more certain and ample reward, and that the demand for good fruits of every description seems to be in advance of the supply.

Very early in the history of the Society were facts stated by Dr. Nichols, in relation to the cultivation of the locust tree, highly worthy of regard. Having myself witnessed similar facts, I am fully persuaded that in no way can our barren and gravelly pastures be so advantageously used, as by covering them with the locust, which may readily be done, either by planting the seed, or by here and there transplanting a tree, and allowing them to spread, as they are much inclined to do. Lands thus managed I have known to yield posts and rail road sleepers, that sold for more than one hundred dollars per acre, for ten acres together, within forty years from the first planting,—which during this period had been of more value for pasturing in consequence of the trees growing thereon. For it is a fact, that the feed both in quantity and quality, under and about the locust tree, is better than where there are no trees. Take into view also the increasing demand for this kind of timber, for rail roads, fencing, trunnels for ships, and other purposes, and the rapidity of its growth, advancing so rapidly that those who plant may gather, and it will not be easy to find an object more worthy the attention of the owners of such unproductive lands.

Suppose our farmers should set out rows of the locust, the sugar maple, the ash, the elm, or the larch, by the borders of their fields, by their pasture fences, or by the road side,—and in this way start a growing from fifty to one hundred trees to each of their acres,—would their other crops in any manner be prejudiced thereby ?—

Would not the verdure and beauty of the scenery more than balance all inconveniencies? Let these trees continue to grow, for one generation only, and the trees themselves would be of more value, than the land on which they were planted. Let them be planted in the streets of villages, and about dwellings, as seems to be the growing taste of the public, and they will have a value almost beyond estimate.*

The cultivation of the mulbury tree, for the making of silk, demands a passing notice in the history of the efforts of this society. Much pains has been taken to bring this subject before the public, and many efforts have been made to diffuse information, and to encourage the culture. I regret to say that the present condition of this culture, in this County, so far as I have been able to learn it, does not warrant sanguine hopes of much benefit accruing therefrom. Numerous premiums have been offered and awarded for nurseries and trees in various stages of their growth, and numerous experiments have been made, notices of which have been given to the public; but I am not able to refer to any cultivator who has a plantation in successful growth, or to any individual who has realized a fair remuneration for his labor. Visionary theories have taken the place of established facts. Fanciful estimates, of well balanced accounts. It should be remembered that plants attain to highest perfection for all useful purposes, in the climate and soil where they are found indigenous; and that the further they are removed from these, the greater is the uncertainty of their success. The application of this principle will lead to the selection of those species and varieties that are best adapted to our climate and soil. If any such can be found that will endure and flourish, from year to year, without special nursing or hot-bed forcing,

* In three instances within my observation have I known the ravages of fire stopped by the shady elms. This was distinctly so in the destructive fire of Sept, 22, '43, at Danvers, which was prevented passing from the Church to the easterly side of the way, by several thrifty elms that had been set only about twenty years. Had it not been stayed in this manner, the whole village must have been consumed. A similar event happened at Gloucester but a few years since. Surely such facts should prompt to the cultivation of such trees.

then may the fingers of the young and the feeble be advantageously applied to picking the leaves of the mulberry, and to aiding the labors of the most perfect of all manufacturers, the silk worm. Until some such variety can be naturalized in our soil (and of this I will not despair,) I shall have little hope of this culture.*

Repeatedly has the propriety and expediency of the establishment of schools for the instruction of young men in the science and practice of agriculture been agitated. So often has this been adverted to in public addresses, were it not for its intrinsic importance, I should hardly feel justified in again introducing it. The Academies at Byfield and at Andover, have been presented to your notice, with all the plausibility that the eloquence of a late President,† or the ingenuity of a learned Professor‡ could suggest; but still we have none of their graduates at our festivals;—we grope on still without the illumination of their rays. Why is this? Is the idea of instructing young men in a business that is to occupy their time for life a fanciful one, that cannot be carried into practical operation? Such is not true of other employments. Who that has a son destined to be a carpenter, a blacksmith, or even a manufacturer of cloths, or of shoes, hesitates to appropriate years of his time to qualify him in his art? And does the farmer's art demand less instruction? The mistake lies in a misapprehension of the qualifications requisite in a farmer, and in the manner these qualifications are to be acquired. If farmers heretofore have been deterred from placing their sons at school as proposed, by their want of confidence in those who conducted such schools, because they did not exhibit the hardened hands and sinewy limbs requisite for the handling of stone, or holding the

* From the abundant reservoir of facts annually furnished by the Commissioner of Patents, we learn that 315,965 pounds of cocoons were raised within the United States the past year. This would seem to justify the belief that some parts of our country are favorable to the growing of silk; and that all that is wanted is more care in the selection and adaptation of the varieties to the different parts.

† Hon. E. Moseley, of Newburyport.

‡ Rev. A. Gray, of Andover.

breaking-up plough,—or were arrayed in black coats and kid gloves, instead of woollen frocks and leathern aprons;—let the farmers themselves take the direction into their own hands, and govern them in a manner that shall be practically wise.

Here may I be permitted to make a suggestion, which seems to me capable of being advantageously applied. It is to make it a part of the course of instruction in our common schools to learn the elements of agricultural science, the constituents of soils and manures, the geological formation of the earth, the physiology of plants, and the philosophy of vegetation. I do not suppose that all boys at school can fully comprehend these subjects, in which the wisest can ever find something new; but they can acquire the original elements, and when once impressed on the youthful mind with proper illustrations, they will never be entirely effaced. Like nursery tales they will constantly be recurring to recollection, for instruction and delight. The modern system of teaching useful ideas at the same time that boys are taught to read and to parse, is worthy the attention of those who direct these matters;—and what more useful ideas can be selected than those which are essential to be known by a large majority of the people? We have our grammars and text books simplified to the lowest degree on every other subject;—why should there not be such on agriculture? Would there be any difficulty in collecting a cabinet of specimens in each of these schools for the illustration of all these subjects? Let it be known that these things were to be taught, and then teachers would take care to be prepared to teach. In what manner could a DANA, a JACKSON, or a GRAY, who have by their publications, manifested so much ability to instruct the farmers themselves, better add to their well earned reputation of public benefactors, than by preparing an agricultural catechism for common schools? One adapted to the instruction of the pupil, rather than a display of the knowledge of the author. And how could our learned Board of Education, whose peculiar duty it is to cherish these institutions, which are the pride

and glory of New England, better advance the interests of the Commonwealth, than by making such a work a part of the requisite studies in all our schools? He that contributes to elevate the condition of the farmer, improves the main pillar of the State.

While penning these remarks, a notice came to hand of a liberal appropriation by the State of New York, a glorious State, always ready to go ahead in every good work, for the establishment of a State Agricultural School. Shall Massachusetts be out-done in a work so essential to her best interests? We admire that liberality which has founded and cherished the many noble Institutions of learning and benevolence with which she is blessed, and blessing the afflicted and unfortunate.—To her immortal glory will her charities to the *deaf*, the *blind*, and the *insane*, be ever held in remembrance. But is there not a necessity for something more directly to be done for that class which constitutes the major part of her population? Without a common centre, without a fountain from which teachers are to be drawn, we shall look in vain for those qualified to teach. We want practical instruction. We want that kind of instruction which is calculated to qualify young men in the best manner for the real business of life. We want Institutions that shall combine theory with practice, so regulated that when our sons graduate, they shall not then be under the necessity of *beginning to learn*. Whence have originated, and how have been educated, those practically useful men, of which our Country has most reason to be proud? Let the history of a Franklin, a Rumford, or a Bowditch, all sons of Massachusetts, answer the inquiry.

I cannot otherwise so forcibly express my views of the importance of establishing agricultural schools, as by quoting the language of that most eminent friend of the farmer, and of man, in his last address, delivered at New Haven in 1839—the late Judge Buel of Albany. "I pretend not," says he, "to the spirit of prophecy, yet I venture to predict, that many who now hear me, will live to see professional schools of agriculture estab-

lished in our land; to see their utility extolled; and to be induced to consider them the best nurseries for republican virtue, and the surest guarantee for the perpetuity of our liberties."

Accurate observers have estimated that more than half the young men from the country who have left the rural pursuits of their fathers, for the more fascinating and promising employments of the city, have either been ensnared in the nets of vice there spread at every corner, or been made frantic with the visionary dreams of speculation, so that before the meridian of life, ruin has been their destiny. Have we any reason to expect better things in future? Is there such an improvement in the moral condition of our cities as to allay our fears? If heretofore, one half have been lost, what is now the prospect? Let the wise parent say which is the better, so to educate his sons that they may settle down around him, substantial, useful citizens, or send them to the cities to seek their fortune with the equal chance of terminating their career in infamy.

I cannot forbear quoting a sentence on this subject from an address delivered before the Berkshire Agricultural Society, in Oct. 1829, by an authority as high as any other in the Commonwealth—and as well entitled to respect. Says the orator,* "It should thus be one of the first and most important objects of the farmer, after having familiarized his son to habits of industry, and instructed him in those branches of labor fitted to boyhood and early youth, to provide for him the means of a regular and systematic education, and when he shall have finished his course of education, instead of indulging the delusive hope of deriving honor or success by entering into those learned professions which are already crowded to overflowing, and dividing the profits of a dunning letter with some hungry brother of the bar, or mounting the same steed with some half starved disciple of Æsculapius, let him return to the pursuits of early life and become the industrious, intelligent, and independent farmer."

* George N. Briggs, Esq.,—the present Governor of the Commonwealth.

In glancing at prominent incidents in the history of this Society, the aid it has received from the Clergy of the County, should not be passed unnoticed. At its commencement they were all freely admitted honorary members. From many of them have we received much useful instruction, both in their learned discussions of agricultural topics, and their practical application of the principles taught. From none more than our venerable friend at Bradford,* who is always at his post ready to serve in the cabinet or the field. The pages of our journals will fully sustain this remark. Such examples of practical and elaborate usefulness are an honor to the profession. Not less are we indebted to our friend now in Europe,† who having drained our own Commonwealth, and drawn deeply upon the inexhaustible fountains of the Empire State, is now laboring with his characteristic ardor to amuse and enlighten the world. Gladly would I have adverted to some of the interesting hints and facts with which he has lately favored us, in his view of the present state of agriculture in England. But they must not be marred by abridgment.

With the Clergy it mainly rests, whether agriculture shall continue to flourish and advance. Diffused as they are in every village and corner of the land, and holding the controling influence which should ever be conceded to men who fill this station, as it ought to be filled; if they would but lend their counsel for the introduction of new improvements, and apply their hours of leisure in practical illustrations of them, they would add much to their benign influence upon those under their charge;—and indirectly increase the *fleeces* on the *flocks* from which they are to be clothed. Was it not a good custom of our fathers, when they settled their minister (for life, as all such settlements should be,) to provide him with a mansion and a few acres for tillage, upon which, by his own industry, he could raise a portion of those little comforts so convenient to all? By thus dividing their labors between

* Rev. G. B. Perry.

† Rev. H. Colman.

the garden and the study, they found themselves greatly benefitted in the products of the one, and in the superior ability to discharge the duties of the other.

Farmers of Essex,—Notwithstanding the many obstacles with which you have to contend, in the comparatively hard and unfertile character of your soil,—in the tedious and protracted labors of the winter,—in the occasional interruptions of your crops by drought or by frosts,—and in the competition from the overflowing superabundance of other climes more favored;—still you have much reason to rejoice and be content with your condition. First of all—that you are freemen—and all around you are so. The curse of slavery does not, and cannot exist on your soil. That spirit of liberty which animated the breasts of our pilgrim fathers, when they abandoned their homes and friends, most dear for conscience' sake, by the patriotic efforts of their most distinguished son* in our courts of justice, secured to us this boon forever. No one circumstance has contributed more than this to elevate the character of the people of Massachusetts. Happy are we even now, in the vigorous protection of this palladium of our liberties, by the manly efforts of his descendants, not less distinguished. When services like these shall be forgotten, then will freedom cease to be worthy of remembrance.

Congratulate yourselves on the general prevalence of the sound conservative principles of liberty, integrity and law, that pervade this community. Where on the face of the globe can there be found a people, in the stability of whose institutions more confidence can be placed than in those of the good old County of Essex? When has it been known that popular phrenzy or misguided fanaticism were here to any considerable extent triumphant? When did the people of Essex ever presume to be wiser than the law? Who ever for a moment questioned the entire security of life, liberty, and property within our borders? Of what avail is it that there are other lands, watered with crystal streams, warmed

* Hon. John Adams, in 1765, at Boston.

with a milder sun, and regaled with ambrosial breezes, if these rights are insecure? Have we not still ringing in our ears, from the favored paradise of the atlantic shores, the city of brotherly love, and from the fertile prairies of the west, rumors that make our nerves rigid with horror, and chill the blood within us? Who for a moment would exchange the peaceful security of the New England farmer's cottage, for the splendor of a palace thus surrounded? Be content then, with the lot assigned you, and avail yourselves of all the means at your command for its improvement. Who but the farmer did the poet contemplate, when he wrote

> "Reason's whole pleasure, all the joys of sense,
> Lie in three words, *health peace*, and *competence*."

Contrast for one moment, the condition of the Massachusetts farmer with the farmer in England, as given by Mr. Colman in his report just published. There, rarely if ever, does he own a rod of the soil that he cultivates;—burdened with an annual rent that would almost purchase the acres here,—subject to the whim and caprice of an aristocratic landlord, whom he dare not approach, except by gracious permission,—the wonder is, that he has a heart to labor at all,—or even to superintend the labor of others. I now speak of the higher class of farmers, who rent the lands of the lords above them. If you look at those who actually do the labor, you there find the *ditcher*, *ditcher* for life;—the ploughman, incapacitated for any other employment,—with a mind as void of intelligence as the horses he drives;—and all with such limited means of sustenance and support, as never for a moment to indulge the hope of a shelter from the storm, that they may call their own. Such things may be endured where better are not known. But such things will not be endured by those who have inhaled the breezes that wave over our rock-bound shores.

England, who boasts of her abhorrence of enslaving the Africans, to her honor be it ever remembered, at the same time degrades her own sons with a more *servile slavery*.

Wonder not that REFORM is contemplated;—humanity demands it;—the spirit of liberty demands it;—christianity demands it. Let it come—come it must.

Have we not cause of congratulation in the improved moral and social condition around us? Is it not true among farmers as with others, that their customs and habits have materially changed for the better within a few years? Twenty-five years since, and nine-tenths of our farmers were more or less *in bondage to alcohol.* I do not mean that so many of them were *intemperate*, in the ordinary sense of the term, but that they were in the habit of using that which was not necessary to be used—to the great detriment of themselves and their estates. Where will the farmer now be found, who will unblushingly say, before he commences his haying, that he must lay in as many gallons, or even quarts of spirit, as he expects to cure tons of hay? Or that his men cannot commence mowing in the morning, without their *bitters;*—proceed at eleven o'clock without their *grog;*—or load in the afternoon, without their *bumper;*—not to mention the grosser indulgences of the evening. Time was, when these customs, by whatever name they were called, were as familiar as household gods. When even the sober man thought that some was necessary in *haying*—especially in going to the *meadows*, or the *marsh*. But manners have changed with times;—what was once almost a universal custom, is now only to be countenanced for *medicinal purposes*, and then with sound discretion. May the change be perpetual.

May I not congratulate you on the auspicious circumstances to our country, under which you have this day assembled? All classes of our fellow citizens actively and successfully employed. The necessaries and comforts of life at command in abundance. The prices of labor, such that no man in health need to be in want. Each of the various branches of industry in the community, receiving its due encouragement, under the fostering protection of our government: and in a multitude of ways, mutually aiding each other. The farmer feeds the manufacturer; the manufacturer clothes the farm-

er; the merchant transports their commodities from one to the other; and the surplus, if any, where it is most needed. In the body politic, as in the natural body,—no one part can say to the other, I have no need of thee; but the united and harmonious co-operation of all is essential to entire success. If one is sick, the others will faint; if one languishes, the others will decay.

Whatever may have heretofore been thought, it is now admitted by all, whose opinions are of any value, that the vocation of the farmer is as honorable and respectable, as any other in the community.

"Worth makes the man."

Our most distinguished and valued citizens have been farmers, and esteemed it their highest honor to be considered such. Instance the farmer of *Mount Vernon;* the farmer of *North Bend;* and may I not add, the farmer of *Ashland;* to complete a *trio*, of which any nation might be proud.

To be an honest, worthy, and intelligent farmer, is the highest grade of nobility ever to be desired in this land of equal rights. When other titles shall tower above this, then will our liberties be in danger. In the "times that tried men's souls," to whom did we look but to the substantial yeomanry of the country for succor and support. Our main reliance for the protection of our rights, under the Providence of God, will ever be on the independent tenants of the soil. The home of the farmer is on the soil he tills;—there he desires to live;—there he expects to die;—there he hopes will abide his descendants for many generations. How direct then his interest in the welfare of his country!—How ardent his hope that she may continue to prosper!

Remember that our rational enjoyments do not depend so much upon the bounties of nature, as upon our personal exertions to procure those enjoyments.

Our necessity for labor is the surest protection against the allurements of vice.

When man was originally placed in the garden of Eden, in a condition the most favorable for happiness, in the power of Omnipotence to create, he was directed "*to dress it and to keep it*," by the application of his own labor; and such has ever been his duty and his privilege, and ever will be, while the laws of nature shall endure.